

3.18 TRANSBOUNDARY IMPACTS

The body of NEPA law directs Federal agencies to analyze the reasonably foreseeable consequences of proposed actions, regardless of where impacts might occur. Based on this, the CEQ, in a July 1, 1997 memorandum to heads of agencies, determined that NEPA requires agencies to include analysis of reasonably foreseeable transboundary effects in their analysis of proposed actions in the United States. The CEQ further states that such effects are best identified during the scoping stage, and should be analyzed to the best of the agency's ability using reasonably available information. Such analysis should be included in the environmental documentation for the proposed action (CEQ 1997). The CEQ policy has been incorporated into DOI's Environmental Statement Memorandum 97-2.

The transboundary impacts analysis addresses impacts to environmental resources in Mexico, as well as United States' treaty obligations and other agreements with Mexico.

3.18.1 Affected Environment

As illustrated in Figure 3.18-1, from Morelos Diversion Dam (RM 22.1) at the NIB (the California-Mexico border), the Colorado River flows southwesterly, roughly paralleling the Limitrophe section of the Arizona-Mexico border. After passing the SIB (the Arizona-Mexico border), the river flows southwest and receives tributary flows from the Rio Hardy before draining into the Sea of Cortez (also called the Gulf of California).

3.18.1.1 Environmental Resources

Impacts from construction-related activities in Reach 7 could affect environmental resources in Mexico. Because construction impacts would be localized, only the areas immediately adjacent to Reach 7, the Mexicali Valley in Baja California and the San Luís Río Colorado Valley in Sonora, are discussed. The Mexicali and San Luís Río Colorado valleys are generally in agricultural use and contain a few scattered rural residences. No residences appear to be present in the area immediately adjacent to the LCR where conservation measures would be implemented. The only urban areas sufficiently close to be affected by construction activities are the city of Algodones, which is located adjacent to the Colorado River just south of the NIB, and the city of San Luís Río Colorado, which is located just south of the Arizona-Sonora Border, immediately east of the river.

Air quality within the Reach 7 area is generally good, but the Yuma area was determined to be in non-attainment of the NAAQS for PM₁₀ in November 1990. The area has not violated the NAAQS since 1991. Contributors to PM₁₀ include agricultural activities, prescribed burning, unpaved roads, general construction activities, and various other sources.

Flows in Reach 7 vary. At times the lower part of this reach is dry. Cohen and Henges-Jeck (2000) reported average total flows in this reach of 22,000 af in non-flood years and 2,120,000 af in flood years. These flows are the result of seepage from Morelos Diversion Dam, flow releases from Morelos Diversion Dam (flood flows and excess water not diverted by Mexico), irrigation return flows from Mexico, canal wasteways in the United States, and groundwater accumulation from both the United States and Mexico. Figure 3.18-2 shows monthly average

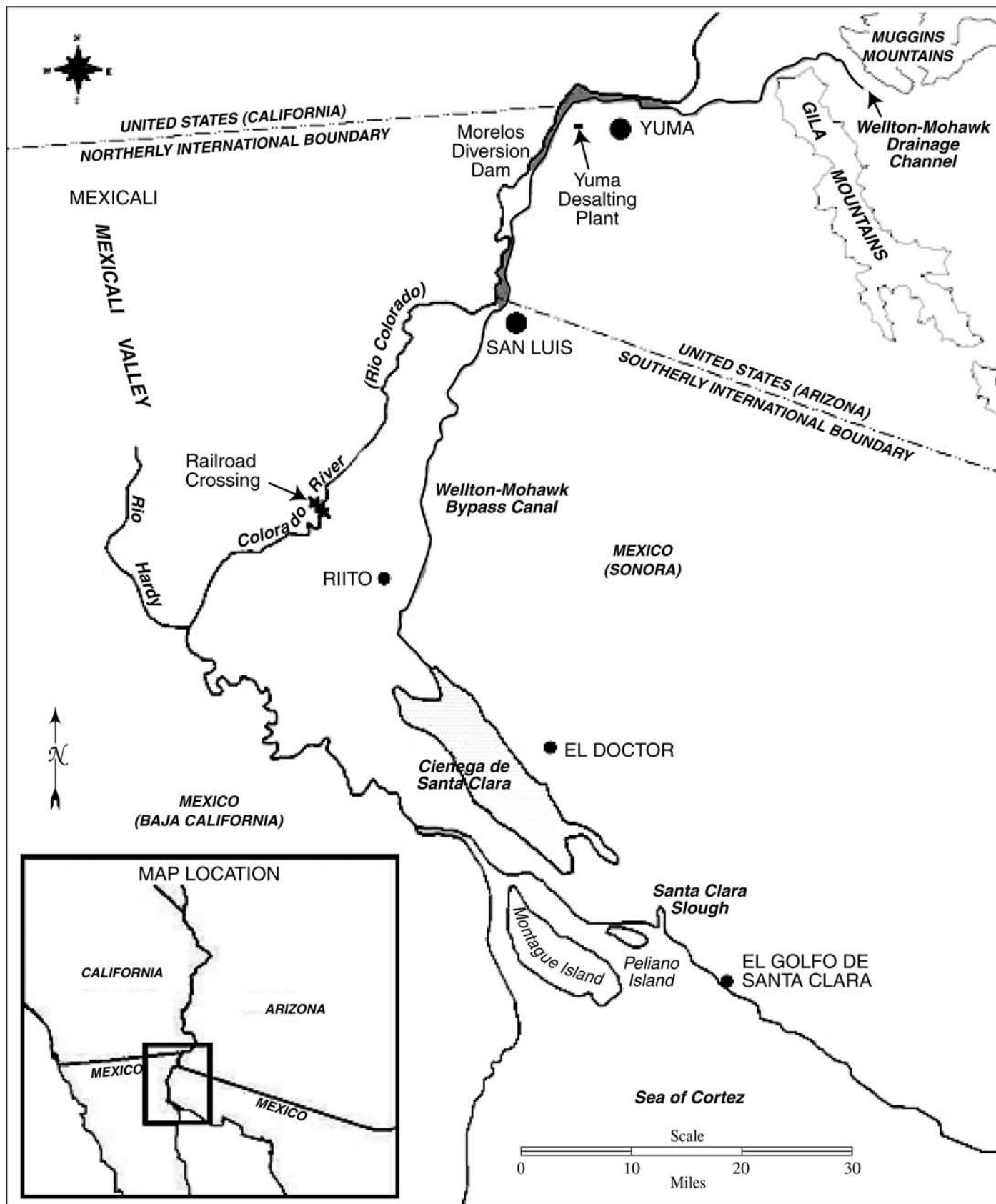


Figure 3.18-1. Colorado River Location Within Mexico

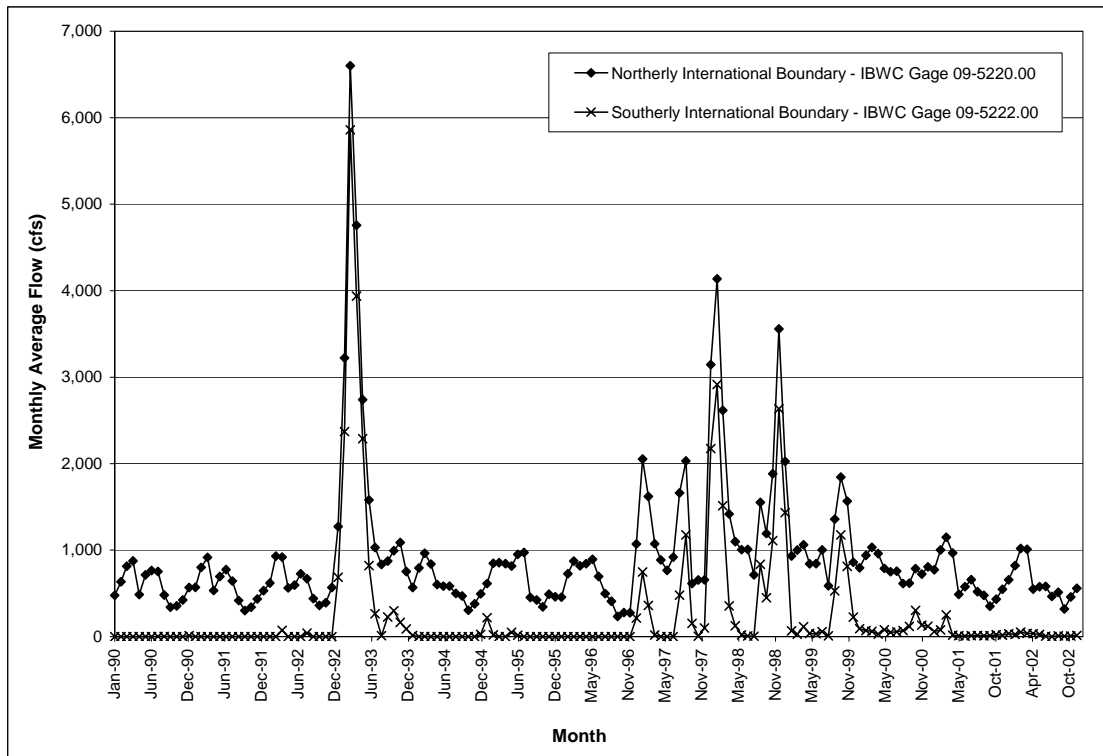


Figure 3.18-2. Monthly Average Colorado River Flows at the NIB and SIB

flows at the NIB and SIB from 1990 to 2002. These flows are recorded and reported by the IBWC (2003). Water quality immediately below Morelos Diversion Dam meets the standards required by USIBWC Minute No. 242 of the 1944 Water Treaty, and likely deteriorates to some degree further downstream depending on flows.

The Comisión Nacional del Agua is the Federal agency that defines and administers water policy in Mexico, including overseeing the operation, maintenance of delivery canals and drainage systems and the allocation and management of all waters that belong to the nation (Clark et. al. 2001). The Mexicali and San Luís Río Colorado valleys are within the Colorado River Irrigation District Number 14. The irrigation district obtains its supply from the Colorado River and groundwater. Although irrigation accounts for the majority of the water used in the district, the district does provide water to municipal and industrial users in Mexicali, Tecate, Tijuana, Ensenada, and San Luís Río Colorado (Clark et. al. 2001). The Colorado River Irrigation District Number 14 contains 23 irrigation modules. The irrigation modules have the local governing responsibility for water management along with the operation and maintenance of distribution canals (Clark et al. 2001).

3.18.1.2 United States' 1944 Water Treaty Obligation

Flows in the reach of the Colorado River below Imperial Dam are primarily water to be delivered to Mexico in accordance with the 1944 Water Treaty. Under Article 10(a) of the treaty, Mexico is allotted a guaranteed annual amount of 1.5 maf of Colorado River water. Under

Article 10(b) of the treaty, Mexico may schedule up to an additional 0.2 maf when “there exists a surplus of waters of the Colorado River in excess of the amount necessary to satisfy uses in the United States.” Under current practice, this 0.2 maf is available to Mexico when flood control releases are made, and is scheduled for delivery throughout the year in accordance with Article 15 of the 1944 Water Treaty. Additionally, under Article 10(b) of the treaty, Mexico was allotted “any other quantities arriving at the Mexican points of diversion.” These flows are generally referred to as “excess flows” and are over and above the 1.5 maf (or 1.7 maf) delivery to Mexico under the 1944 Water Treaty. Excess flows are primarily a result of (1) operational activities upstream (e.g., canceled water orders in the United States, maintenance activities, etc.), (2) a Gila River flood event, or (3) flood control releases along the mainstream of the Colorado River. Article 10(b) also stipulates that in the event of an extraordinary drought or serious accident to the irrigation system of the United States, water allotted to Mexico can be reduced in the same proportion as consumptive uses in the United States are reduced. The United States has met the 1944 Water Treaty obligations every year.

Per USBWC Minute 242 of the 1944 Water Treaty, the United States must deliver water to Mexico with an average annual salinity concentration no greater than 115 ppm +/- 30 ppm over the average annual salinity concentration of the Colorado River at Imperial Dam. Thus, an increase in salinity at Imperial Dam directly translates to an allowable increase in salinity of water delivered to Mexico and an increase in salinity of water flowing past Morelos Diversion Dam. The United States has met the water quality obligations every year.

The waters of the Colorado River, once delivered to Mexico, are under the jurisdiction of Mexico. The 1944 Water Treaty contains no provisions requiring Mexico to provide water for environmental protection, nor any requirements relating to Mexico’s use of that water¹. As flows arrive at Morelos Diversion Dam, Mexico has the discretion to divert more water than its allocation or allow all the additional flows to pass downstream of Morelos Diversion Dam. In the past, Mexico has generally chosen to increase its diversion for use in agriculture for increased crop production and soil salinity improvement, or for diluting flows delivered at the SIB, municipal industrial uses, or to recharge groundwater aquifers in the Mexicali Valley (USBR 2001a).

Various other agreements including, although not limited to, Minutes of the 1944 Water Treaty and other treaties with Mexico (such as the 1970 Boundary Treaty) define the United States responsibility for Colorado River water deliveries, water quality, and river and levee maintenance.

3.18.2 Environmental Consequences

The analysis of transboundary impacts is required by NEPA, which does not require the use of significance criteria. This analysis addresses whether construction and operation of the proposed action would have substantial adverse effects on environmental resources in Mexico.

¹ In December 2000, the governments of the United States and Mexico, through Minute 306 of the 1944 Water Treaty agreed to (1) develop joint studies that include possible approaches to ensure use of water for ecological purposes on the Colorado River below the NIB; and (2) through a binational technical task force, to examine the effect of flows on the existing riparian and estuarine ecology of the Colorado River from the NIB to the delta with a focus on defining the habitat needs of fish, and marine and wildlife species of concern to each country.

In addition, it addresses whether the proposed action would have substantial adverse effects to the United States' treaty obligations or other agreements with Mexico where important resources in Mexico would be affected.

3.18.2.1 *Alternative 1: Proposed Conservation Plan*

Impacts

ENVIRONMENTAL IMPACTS

No construction would occur in Mexico; therefore, direct impacts such as those associated with the conversion of agricultural land to conservation areas, the loss or alteration of existing habitat, and impacts to cultural resources would not occur. Substantial adverse noise impacts would not occur since the area adjacent to the LCR is used for agriculture and noise sensitive receptors are not present. Runoff from created/restored habitat would not alter the slopes of adjoining fields because the Colorado River is the low point between Arizona and Mexico, thus preventing water from flowing from conservation areas to Mexican fields. Other impacts, such as erosion-induced siltation, accidental spills, and increased risk of wildfires and vectors would be minor and localized and would not adversely affect Mexico. The water supply for the proposed action would be obtained through a contract with an existing water purveyor, or purchase or transfer from existing Colorado River water users in the United States and would not affect Mexico's Colorado River supply. Air emissions from construction activities could affect Mexico, as described below.

Impact TRANS-1: PM₁₀ and combustive emissions from the construction and maintenance of created conservation areas in Reach 7 could disperse to Mexico. As described in section 3.3, construction activities and periodic prescribed burns would produce temporary fugitive dust emissions and intermittent combustive emissions. These air emissions would last only for the duration of the construction or maintenance activity and would dissipate as the distance from the construction site increased. The portion of Mexico that is near Reach 7 is in agricultural use and is sparsely populated. Thus, sensitive receptors would not be adversely affected by these air emissions. Over the long-term, to the extent that agricultural land is converted to conservation areas, emissions would be reduced since fields would no longer be plowed. The proposed action would not result in substantial adverse impacts to Mexico.

Mitigation Measures

No mitigation measures are required because substantial adverse impacts would not occur. The implementation of **Mitigation Measures AQ-1 and AQ-2** would, however, reduce air quality impacts in Mexico.

Residual Impacts

Residual impacts are those that would occur after the implementation of mitigation measures to reduce an impact. No mitigation measures are required; thus, no residual impacts would occur.

TREATY OBLIGATIONS

The proposed action would not affect the amount of water delivered to Mexico, nor would it conflict with the 1944 Water Treaty and related agreements. As described in section 3.14, water supply for the proposed action would be obtained through legal means consistent with the Law of the River. Because the supply would be obtained through a contract with an existing water purveyor, or purchase or transfer from existing Colorado River water users in the United States, and would not be an expansion of water use in the Lower Division States, excess flows and flood flows to Mexico would not be affected by the proposed action. Reclamation would continue to make deliveries to Mexico in compliance with the 1944 Water Treaty, USIBWC Minute 242 of the 1944 Water Treaty, and all other applicable agreements. The waters of the Colorado River, once delivered to Mexico, would continue to be under the jurisdiction of Mexico, and any conservation measure implemented in Reach 7 would not obligate Mexico to dedicate or deliver water for land cover type enhancement purposes, unless mutually agreed upon by both countries. Additionally, Reclamation would continue to meet the requirements of the various other agreements, treaties, and Minutes of the 1944 Water Treaty. Because the proposed action would not affect Colorado River water deliveries to Mexico, including 1944 Water Treaty flows, excess flow and flood flows, and would not otherwise change the terms of the 1944 Water Treaty, USIBWC Minute 242 of the 1944 Water Treaty, or other applicable agreements, it would not have adverse effects to the United States' treaty obligations or other agreements with Mexico where important resources in Mexico would be affected.

3.18.2.2 Alternative 2: No Action Alternative

Under Alternative 2, it is likely that conservation measures similar to those included in the proposed action would be implemented because compliance with the ESA still would be required for the covered actions, although some conservation could occur in the off-site conservation areas (as described in section 3.18.2.4 below), as well as along the LCR. To the extent that conservation was implemented in the off-site conservation areas, transboundary impacts would not occur because these sites are not sufficiently close to Mexico. To the extent that the agencies undertaking the covered actions proceed with ESA compliance through section 7 consultations instead of the section 10 permitting process, there may be a reduced number of covered species because unlisted species will not be included. This would also likely result in a smaller amount of conservation area being established, resulting in a lower likelihood of conservation measures being implemented in Reach 7. The potential for transboundary impacts would be even less than described for the proposed action.

Mitigation Measures

No mitigation measures are required because substantial adverse impacts would not occur. The implementation of mitigation measures such as **Mitigation Measures AQ-1 and AQ-2** would, however, reduce air quality impacts in Mexico.

Residual Impacts

Residual impacts are those that would occur after the implementation of mitigation measures to reduce an impact. No mitigation measures are required; thus, no residual impacts would occur.

1 **3.18.2.3 *Alternative 3: Listed Species Only***

2 *Impacts*

3 **Impact TRANS-1** applies to Alternative 3. It is estimated that Alternative 3 would develop
4 fewer acres of conservation area than the proposed action, which generally would result in
5 proportionately fewer air quality impacts and less potential for conservation to occur in Reach
6 7.

7 *Mitigation Measures*

8 No mitigation measures are required because substantial adverse impacts would not occur. The
9 implementation of **Mitigation Measures AQ-1 and AQ-2** would, however, reduce air quality
10 impacts in Mexico.

11 *Residual Impacts*

12 Residual impacts are those that would occur after the implementation of mitigation measures to
13 reduce an impact. No mitigation measures are required; thus, no residual impacts would occur.

14 **3.18.2.4 *Alternative 4: Off-Site Conservation***

15 *Impacts*

16 No transboundary impacts would occur under Alternative 4. Construction activities would not
17 occur in Reach 7 or in proximity to the Mexican border. As described for the proposed action,
18 the water supply for the Conservation Plan would be obtained through a contract with an
19 existing water purveyor, or purchase or transfer from existing Colorado River water users in the
20 United States and would not affect Mexico's Colorado River water supply.

21 *Mitigation Measures*

22 No mitigation measures are required because no significant impacts would occur.

23 *Residual Impacts*

24 Residual impacts are those that would occur after the implementation of mitigation measures to
25 reduce an impact. No mitigation measures are required; thus, no residual impacts would occur.

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